

## ASCII Character Codes

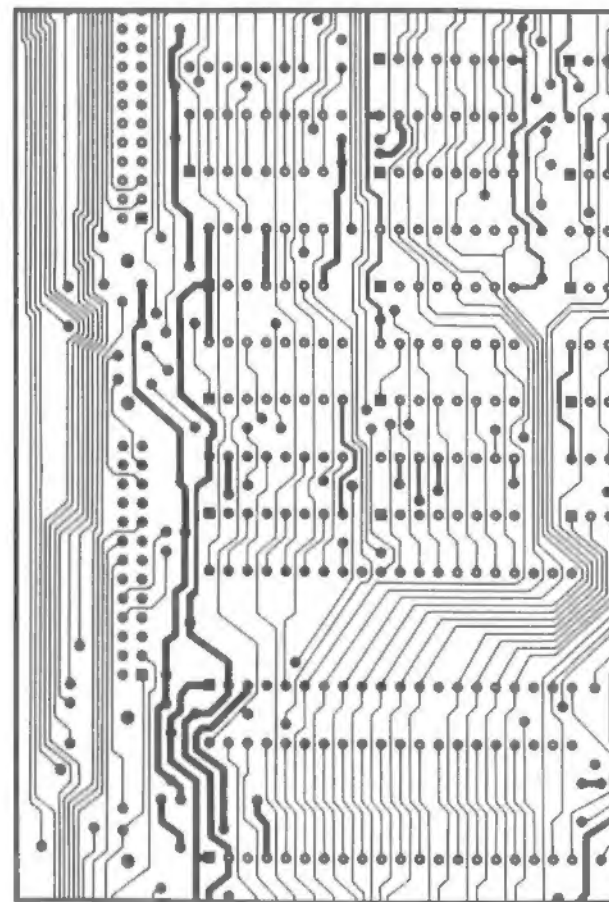
DEC	CHAR	DEC	CHAR	DEC	CHAR
000	CTRL-@	043	+	086	V
001	CTRL-A	044	,	087	W
002	CTRL-B	045	-	088	X
003	CTRL-C	046	.	089	Y
004	CTRL-D	047	/	090	Z
005	CTRL-E	048	0	091	[
006	CTRL-F	049	1	092	\
007	CTRL-G	050	2	093	]
008	BS	051	3	094	↑
009	HOR. TAB	052	4	095	—
010	LINE FEED	053	5	096	·
011	VERT. TAB	054	6	097	a
012	FF	055	7	098	b
013	CR	056	8	099	c
014	CTRL-N	057	9	100	d
015	CTRL-O	058	:	101	e
016	CTRL-P	059	;	102	f
017	CTRL-Q	060	<	103	g
018	CTRL-R	061	=	104	h
019	CTRL-S	062	>	105	i
020	CTRL-T	063	?	106	j
021	CTRL-U	064	@	107	k
022	CTRL-V	065	A	108	l
023	CTRL-W	066	B	109	m
024	CTRL-X	067	C	110	n
025	CTRL-Y	068	D	111	o
026	CTRL-Z	069	E	112	p
027	CTRL-[	070	F	113	q
028	CTRL-\	071	G	114	r
029	CTRL-}	072	H	115	s
030	CTRL-↑	073	I	116	t
031	CTRL-—	074	J	117	u
032	SPACE	075	K	118	v
033	!	076	L	119	w
034	"	077	M	120	x
035	#	078	N	121	y
036	\$	079	O	122	z
037	%	080	P	123	{
038	&	081	Q	124	
039		082	R	125	}
040	(	083	S	126	·
041	)	084	T	127	DEL
042	*	085	U		

CTRL = Control Character BS = Backspace  
CR = Carriage Return FF = Form Feed DEL = Rubout

## Cromemco 16K Basic Features

- Semi-compiling design — combines the best features of both interpreters and compilers — yields exceptionally fast execution times
- Allows 3 types of variables:
  - \* integer (2 bytes) range +32767 to -32768
  - \* short floating point (4 bytes) range  $\pm 9.99E+62$  to  $\pm 9.99E-65$
  - \* long floating point (8 bytes) range  $\pm 9.99E+62$  to  $\pm 9.99E-65$
- 14 digit accuracy
- Advanced floppy disk I/O capabilities
- Binary and ASCII storage for both programs and data
- Sequential and random access files
- English language error messages
- Syntax error checking as program is entered
- Dynamic error trapping
- TRACE and immediate mode to facilitate debugging
- Advanced string handling capabilities
- Advanced output formatting capabilities
- Chaining of programs
- Direct machine language interaction

# Cromemco 16K Extended Basic Instruction Set



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# Cromemco 16K Basic Instructions

## Abbreviations:

A, B, C, D variables  
m, n, p, r integers  
E, F, G, H expressions or variables  
(H may be relational)  
L1, L2 line numbers  
stmtnt statement  
strng string expression  
[ ] optional parameter  
{ } choose one parameter  
... may be repeated  
fn file number  
p1, p2 parameters  
\$ one letter  
\* do not use with line no.  
\*\* use only with line no.  
† disk basic only  
byte byte value  
fmt format  
dr: drive:

ABSolute value (E)  
ASCii (A\$)  
ATN(E) arctangent  
\* AUTOLine L1, L2  
BINAND (A, B)  
BINOR (A, B)  
BINXOR (A, B)  
† BYE  
CHR\$(A) ASCII character  
CLOSE [Vn\]  
\* CONTinue  
COSine (E)  
† CREAtE strng  
\*\* DATA [A] [strng] [,B ...]  
DEGree  
DELETE L1, L2  
DEF FN\$ (A) = E  
DIM A (m) [, B(n, p, r) ...]  
† \* DIRectory [dr:] [strng]  
† DISK [dr:]  
ECHO  
\*\* END  
ENTER strng  
† ERASE strng  
ESCaPe  
EXPOnent (E)

{ FOR A = E TO F [STEP G]  
NEXT A  
FRActional part (E)  
FREe space (E)  
GET \fn [,p1 [,p2]] \[E, F ...]  
GOTO L1  
{ GOSUB L1  
RETURN  
IF H THEN (L1) {stmtnt}  
IMODE  
INPUT [\fn, p1, p2\] {strng} A[,B ...] [:]  
INTEGER A [(m)] [,B ...]  
INTEger (E)  
INP (m)  
IOSTAT (\fn, m)  
IRN (E) integer random number generator  
LENGth (A\$)  
[LET] A = E  
LFMODE  
LIST [strng:] [L1[,L2] ]  
LONG A [(m)] [,B ...]  
LOGarithm (E)  
† LOAD strng  
MAXimum (E)  
† MAT A = E  
MINimum (E)  
NOECHO  
NOESCaPe  
NoTRACE  
ON E (GOTO) (GOSUB) L1  
ON ERROR {STOP} (GOTO) (GOSUB) L1  
ON ESCaPe {STOP} (GOTO) (GOSUB) L1  
OPEN \fn [,p1 [,p2]] \ strng  
OUT m, byte  
PEEK (m)  
POSItion (A\$, Y\$, n)  
POKE m, byte  
{PRINT} [@] \fn, p1, p2\ {USING fmt} [E[ {} {} F ... ]]  
PUT \fn [,p1 [,p2]] \[E, F ...]  
RADians  
RANDOMIZE  
READ A [,B ...]  
REM [anything you want]  
RESTORE  
\* RENUMBER  
† RENAME strng-old, strng-new

RND (E) random number generator values  
RUN [strng]  
† SAVE strng  
SCRatch  
SET m, A  
SFMODE  
SGN (E) algebraic sign  
SHORT A [(m)] [,B ...]  
SINe (E)  
SPaCe (E) use with PRINT  
SQR (E) square root  
\*\* STOP  
STR\$(n) string  
SYSem (E)  
TANgent (E)  
TAB (E) use with PRINT  
TRACE  
USER (A, p1 [,p2 ...])  
VALue (A\$)

## Hexadecimal — Decimal Conversion Table

HEXADECIMAL COLUMNS											
4			3			2			1		
HEX = DEC			HEX = DEC			HEX = DEC			HEX = DEC		
0	0	0	0	0	0	0	0	0	0	0	0
1	4,096	1	256	1	16	1	1	1	1	1	1
2	8,192	2	512	2	32	2	48	2	2	2	2
3	12,288	3	768	3	64	3	96	3	3	3	3
4	16,384	4	1,024	4	80	4	128	4	4	4	4
5	20,480	5	1,280	5	96	5	144	5	5	5	5
6	24,576	6	1,536	6	112	6	160	6	6	6	6
7	28,672	7	1,792	7	128	7	176	7	7	7	7
8	32,768	8	2,048	8	144	8	192	8	8	8	8
9	36,864	9	2,304	9	160	9	208	9	9	9	9
A	40,960	A	2,560	A	176	A	224	A	10	10	10
B	45,056	B	2,816	B	192	B	240	B	11	11	11
C	49,152	C	3,072	C	208	C		C	12	12	12
D	53,248	D	3,328	D	224	D		D	13	13	13
E	57,344	E	3,584	E	240	E		E	14	14	14
F	61,440	F	3,840	F		F		F	15	15	15
7	6	5	4	3	2	1	0	7	6	5	4
BYTE						BYTE					